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ABSTRACT

This purpose of this paper was to evaluate the effectiveness of interest inventories in counseling female clients. A total of eight basic questions were considered, such as: (1) are interest inventories too dependent on particular criterion groups to be of much value in counseling? (2) what factors are associated with a change in measured interests? and (3) are interest inventories valid for female clients? Issues pertaining to scale development reliability, validity, test usefulness, and profile interpretations are critically evaluated. Suggestions for improved counseling practices and needed research are offered, including: (1) a single interest inventory for men and women would benefit both counseling and research; (2) counselors must become aware of those circumstances in which it is advisable to use interest inventories and those situations in which it is probably unnecessary; and (3) attempts to facilitate the interpretation of test results to clients need to be broadened and evaluated. (Author/KJ)

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USE OF INTEREST INVENTORIES WITH WOMEN

Richard W. Johnson

Abstract

Eight questions concerning the use of interest inventories with female counselees are considered. Issues pertaining to scale development, reliability, validity, test usefulness, and profile interpretations are critically evaluated. Suggestions for improved counseling practices and needed research are offered.

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USE OF INTEREST INVENTORIES WITH WOMEN[1]

Richard W. Johnson

Until recently, the use of interest inventories with women has been relatively neglected in the professional literature (Campbell, 1964, 1966b). A number of research studies in the past few years, however, have substantially added to the body of knowledge in this area. These studies have important implications for counselors.

The purpose of this paper is to evaluate the effectiveness of interest inventories in counseling female clients. Eight basic questions are considered. Practical applications are stressed.

Scale Development

1. Are separate men's and women's inventories or scales necessary? Test authors have generally prepared separate inventories for females (e.g., Manson, 1931; Strong, 1943; Tyler, 1941), or, at the very least, separate scales or norms (e.g., D'Costa, 1969; Kuder, 1966). The use of separate inventories for men and women has proved to be most troublesome to counselors. The range of occupations covered by such inventories has been relatively limited to occupations which attract large numbers of females.

The use of the Men's form of the Strong Vocational Interest Blank (SVIB-M) has been recommended for females who are career oriented (Darley & Hagenah, 1955; Lewis, 1968) or who show masculine interests (Campbell, 1966a). Laime and Zytowski (1963) found that this procedure yielded a greater number of high scores for

female clients, however, the validity of the technique is open to question.

The need for separate interest inventories for men and women has not been well established. In actuality, most of the items (249 of 398 items) on the Strong Vocational Interest Blank for Women (SVIB-W) are also found on the Men's form (Campbell, 1969c). Furthermore, the identical items have usually been weighted more heavily than the unique items on the occupational scales (Seder, 1940b). Holland (1968) found that the Vocational Preference Inventory (VPI) discriminated as well for women as men despite the fact that the occupational items listed were essentially masculine. Perry and Cannon (1968) developed a highly effective scale for female computer programmers based only on the items found on both the SVIB-M and SVIB-W. In general, a fairly diverse item pool would probably suffice as a basis for discriminating the interests of both males and females.

Although separate inventories do not appear to be necessary, men's and women's interests appear to be sufficiently divergent in most occupations to require separate occupational scales or norms. The new Masculinity-Femininity scale on the SVIB, in fact, is based upon the differences in interests found between men and women employed in the same occupation (Campbell, 1969c). The two sexes apparently play somewhat different roles in the same occupation.

In a study of the comparability of men's and women's interests in 10 occupations, Hornaday and Kuder (1961) found that separate norms were necessary for men and women for 6 of the occupations and that a separate scale was necessary for 1 occupation. The

same scale with the same norms was warranted for only 3 of the 10 occupations.

Strong (1943, pp. 568-576) concluded that men's and women's scales could be "combined in some cases" (e.g., Artist), but not in others (e.g., Lawyer). Seder (1940a) found that the two forms of the SVIB were equally valid for female physicians and life insurance saleswomen.

At times separate scales may not be necessary, but without sufficient data, the counselor or researcher may expect to make the most valid judgments regarding women's interests if female criterion groups are used in constructing the scale or in interpreting scores. A common item pool for both men's and women's interest scales would facilitate research on this topic.

2. Are interest inventories too dependent on particular criterion groups to be of much value in counseling? Both the SVIB and the Kuder Occupational Interest Survey (KOIS) lean heavily upon empirical scales. This type of scale offers the most specific and valid information regarding occupational similarities. Because of the great dependence upon the criterion group in scale development, however, the counselor must be fully aware of both the nature of the criterion group and possible changes in the criterion group which might take place over time. The empirical scales are limited by the representativeness of the criterion group members.

In general, scores based upon old criterion groups may be somewhat distorted due to the changing popularity of interest items in the culture as a whole (Campbell, 1968) and to possible changes in the nature of the occupational field itself (e.g.,

Brown, 1966). The actual effect of such time changes on scale scores can be known only by empirical study. In both the recent SVIB revisions, the scores on some of the old and new occupational scales changes considerably (Williams, Kirk, & Frank, 1968; Johnson, in press). In general, the oldest scales showed the most changes. Counselors should be cautious in interpreting scores based upon scales which have not been restandardized for 25 years or more.

Both the SVIB-W and the KOIS have several occupational scales for women based upon N's of 150 or less (viz., Instrument Assembler, Model, Entertainer, Mathematician, Telephone Operator, and Translater scales on SVIB-W and High School Science Teacher, Interior Decorator, Clinical Psychologist, and Religious Education Director scales on KOIS). Counselees' scores may run somewhat lower on these scales than they should (Strong, 1943, pp. 637-650). Cross-validation studies are particularly needed for these scales (Harmon, 1968).

In some instances, distinctions must be made among individuals specializing in different aspects of an occupation. Tate (1961), for example, found that general staff or private duty nurses endorsed a different set of SVIB-W items than nurses employed as instructors, supervisors, or administrators. Johnson, Ohvall, & Kirk (1970) found that female students planning to become hospital pharmacists significantly differed in their interest patterns from those planning to practice community pharmacy.

Counselors may best guard against overreliance upon specific empirical keys by studying both (a) interest patterns and (b) homogeneous interest scale scores. Multiscale analysis (e.g., Smith, 1970) provides a broader basis for interest description. Homogeneous scales (e.g., SVIB-W Basic Interest Scales, Kuder Preference Record-Vocational, and Guilford-Zimmerman Interest Inventory) are relatively "pure" scales which measure interest in one type of activity or closely related activities. Both sets of data should aid counselors in interpreting the meaning of specific empirical scales and in forming hypotheses which transcend the information gleaned from the empirical scores.

The planned, periodic collection of new data on occupational groups to check the validity of the occupational scales is also needed. In addition to updating interest inventories, such studies should provide a valuable amount of information for vocational research in general (e.g., Campbell & Soliman, 1968).

Reliability

3. What factors are associated with a change in measured interests? Women's vocational interests appear to be about as reliable as men's vocational interests. In both cases, long term test-retest reliability coefficients for individual scales average in the .50 to .70 range (Campbell, 1966a). In a fairly recent study (Nolting, 1970), the median correlation coefficient for an abridged version of 31 SVIB-W occupational scales was .58.

An average interval of approximately 9 years had lapsed between the first and second testing periods.

Although the separate scale scores are relatively stable, most counselors have experienced some cases in which individual profiles have undergone significant change. Such changes are most likely to occur where the client is young and/or where the testing interval is several years or longer (Johansson & Campbell, 1969). Aside from these factors, researchers have been relatively unsuccessful in finding factors associated with these changes. The old Interest Maturity scale on the SVIB-M (Form M), for example, was a notable failure in predicting interest stability (Campbell, 1966b).

Several investigators (Dressel & Matteson, 1952; Hoyt, 1960; Matteson, 1961) have suggested that profile changes may be associated with new experiences. Some time ago, Bordin & Wilson (1953) demonstrated that changes in scores on the Kuder Preference Record-Vocational were associated with curricular experiences.

More recently, Petrik (1969) has attributed interest changes of female college students entering a home economics curriculum to academic experiences. He found that SVIB-W scale scores were less reliable (Mdn r = .40) over a 5 to 6 year period for home economics students who persisted in their major than for students who transferred to another field (Mdn. r = .60). Students who continued in home economics substantially increased their scores on the SVIB-W Home Economics scale while students who switched to another field showed no change in their score on this scale.

The students who stayed in home economics apparently

adjusted their interests to conform more closely with their experiences. Because their initial perceptions of the field appear to have been somewhat distorted (their scores on the Home Economics scale ranked only 10th highest among the 31 occupational scales), their interest patterns underwent considerable change. This study supports the view that interests may be modified by post high school experiences.

In his follow-up study, Nolting (1970) found that the female members of the six occupational groups which he studied increased their scores 5 to 18 points on the appropriate SVIB-W occupational scales. Both the magnitude and the direction of these changes have important implications for counselors. A client may score substantially lower on an occupational scale as a college freshman than she would several years later as a college graduate in that field. The rise in score is apparently associated with experience in the field and, at some level, a commitment to that area of endeavor.

Tyler (1964) believes that interests may be best thought of as "programs," not traits, which serve to direct an individual's thinking and activity. These programs are subject to change as an individual progresses through successive developmental stages. Changes of this nature may reflect emotional maturity (Dunkleberger & Tyler, 1961).

The counselor may advise the student that his interest scores may change with experiences, but he still cannot predict which students will significantly alter their interests and which will not. The use of an "item familiarity" index or "breadth of

experience" record may possibly aid in making such predictions (Hoyt, 1960). Additional research on this topic is needed.

Validity

4. Are interest inventories valid for female clients? Measured interests are closely linked to curricular or occupational membership. This relationship has been established time and again in a great variety of situations (Anderson & Barry, 1965; Baggaley & J.P. Campbell, 1967; D.P. Campbell, 1966a; Dunteman, 1967; Educational Testing Service, 1968; Holland, 1958; Kuder, 1966; Shappel, Arnold & Gregory, 1969; Stewart, 1966). Most recently, characteristic interest patterns for women in a variety of nonprofessional occupations (e.g., sewing machine operators, dental assistants, and WAC noncommissioned officers) have been identified (Campbell & Harmon, 1968, 1969; Harmon & Campbell, 1968).

Although women employed in diverse occupations can be clearly differentiated from each other, a majority of women appear to subscribe to a common interest pattern. As many as 90% of female high school seniors receive high scores on the same 3 or 4 SVIB-W scales, viz., Housewife, Office Worker, Stenographer-Secretary, and Elementary Teacher (Layton, 1958). This interest pattern has been variously labeled as "interest in male association, "noncareer pattern," "antimasculine pattern," and "typical feminine pattern."

The occupations associated with these scales are frequently "stopgap" occupations which may be pursued full-time prior to marriage and part-time after marriage. Scores on these scales are characterized by many "Like" responses (Cottle, 1968). The

marriage oriented female apparently has placed fewer limits on her vocational interests. For this reason occupational scales may be poor measures of the life plans for such females.

Interest inventories may gain in their usefulness with female clients as new types of interest scales are added and as females gradually change in their endorsement of career interests. An increase in the number of "feminine, but non-domestic" occupational scales (e.g., Model, Interior Decorator, Entertainer) on the new form of the SVIB-W may enable women to express a richer variety of interests (Campbell, 1967, 1969c). Women may also display greater career interests as their roles expand to include various masculine activities (Jones, 1960) and as they perceive less conflict between marriage and career (Farmer & Bohn, 1970).

A number of studies have attempted to validate the use of interest inventories in identifying and predicting career and/or marriage orientation in females. Tyler (1964) found that high school senior girls with "career" patterns on the SVIB-W could be identified by interest scores acquired at age 14 or before. Delay in accepting the feminine role appeared to be associated with career interests.

Several studies show that the SVIB-W can effectively differentiate between women who prefer a career or homemaking (Hoyt & Kennedy, 1958; Vetter & Lewis, 1964; Wagman, 1966). These studies are limited in that their conclusions are based upon students' preferences, not actual behavior.

Schissel (1968) has recently developed a Career Orientation Scale for Women on the SVIB-M which differentiated between employed and unemployed women reasonably well. The use of this scale is limited with females because it was developed on the Men's form. The predictive validity of this scale has not been examined.

Although the concurrent validity of interest inventories with women has been well established, relatively few longitudinal studies have been undertaken. The results from these studies are mixed.

Interest inventories have been partially successful in predicting academic criteria. Anderson (1968) and Mowbray and Taylor (1967) reported some success in using interest inventories to predict persistence in a school of nursing. Kirk, Goodstein, and Cummings (1961) and Navran (1953), on the other hand, found no relationship between SVIB-W scores and persistence in a nursing program. The revised Registered Nurse scale and new Public Health and Licensed Practical Nurse scales on the SVIB-W may improve the predictive validity of this instrument for nursing students (Campbell, 1969).

Nolting (1970) found that female graduates in 5 of 6 college programs could be identified by their pre-college SVIB-W scores with greater than chance accuracy. His results suggested that the interest scores may be most valid if they are obtained just prior to the time that a specific decision must be made. The

SVIB-W scores were least predictive for the two degree programs (master's degree in social work or library science) which allowed the student to postpone her decision for several years.

Faunce (1968) found that academically gifted female students who graduated from college could be differentiated from nongraduates by means of their SVIB scores. Graduates scored higher on professional or academic scales (e.g., Psychologist, Lawyer); non-graduates scored higher on business or practical-arts scales (e.g., Office Worker, Dietitian).

For the most part, measured interests have not been closely associated with training success (Berdie, 1960). This is true even when the criteria have reflected clinical, not academic, success (Frank & Kirk, 1970; Johnson & Leonard, 1970).

Two long-term follow-up studies of college females suggest that the validity of the SVIB-W in predicting occupational criteria may be influenced by marital status and/or career commitment. In the first study, scores on the SVIB-W taken as a college student were associated with occupational membership 25 years later for a small sample of single women (Harmon, 1967). No relationship between the interest scores and occupational status was found for married women.

In the second study, Harmon (1969) found that nearly half of the women who received high scores on the SVIB-W Social Worker of Laboratory Technician scales as college freshmen reported "no usual occupation" ten years later. The inventory scores failed to identify these women. When these subjects were excluded, most of the women (61-70%) reported a "usual occupa-

tion" appropriate to their SVIB-W scores. This "hit rate" is nearly equivalent to that reported for the SVIB-M (Campbell, 1969a).

The favorable results yielded by Harmon's second study may be attributed, at least in part, to the design of the study itself. First, "usual occupation" appears to be a more liberal index of test validity than "current occupation." When the latter measure was employed, the percentage of test "hits" was reduced considerably. Second, the criterion was broadened to include related occupations as well as the specific occupation associated with the interest scale. Both of these changes appear to be justified. Counselors are generally more interested in helping clients in career planning and vocational exploration than they are in making specific job predictions.

The interest inventories have not been very successful in predicting which women will actually pursue a career and which will not. The SVIB-W Nurse scale did not differentiate between female nurses who practiced their profession upon graduation from college and those who left the field to become housewives (Kirk, Goodstein, & Cummings, 1961). Similar negative results have been reported for occupational therapists and physical therapists (Stone & Athelstan, 1969). Wilkins (1966) found that SVIB-W scores could not accurately forecast "career", "career-homemaking," or "homemaking" life patterns in later life.

Gysbers, Johnston, and Gust (1968) did find some support for the use of "Homemaker" SVIB-W scales (Housewife, Business Education Teacher, Office Worker, Elementary School Teacher, Home Economics Teacher, and Dietitian) and "Career" scales (Psychologist, Artist,Author, Lawyer, and Physician) in predicting life patterns for college females over a 3 to 9 year period. Women with high scores on the Career scales were more likely to be engaged in a career or attending school. Women with high scores on the Homemaking scales appeared to be less achievement oriented. Interpretations based upon this study must be limited, however, in that the subjects who did not show "stable" homemaking or career patterns on the SVIB-W at the time of the follow-up study were eliminated from further consideration. Inclusion of these subjects (approximately one-third of the total sample) would have attenuated the predictive validity of the interest scales.

If a valid measure of career orientation can be developed, counselors will be helped in aiding women in their career and/or social development. Such a scale may eventually become obsolete if women's and men's work roles merge (Zytowski, 1969b), but the scale would have immediate value in helping the female client gain increased insight into her interest patterns.

Until the predictive validity of such a measure can be confirmed, counselors may best proceed by counseling all females as if they were career oriented (Harmon, 1969). Most women desire to pursue at least a part-time career sometime in their life (Rand, 1970). The interest inventories can provide helpful in-

formation for this type of counseling.

5. What should a client do when interest inventories disagree? Although no study has apparently been completed comparing the different interest inventories for women, results with the different men's forms suggests that the interest inventories may be only moderately similar (King, Norrell, & Powers, 1963; Wilson & Kaiser, 1968; Zytowski, 1968). Possible discrepencies between interest inventories may be illustrated by the following case history:

Ellen came to the Counseling Center on the advice of the faculty adviser in the Occupational Therapy program on campus. She thought she might like to major in O.T., but she was not sure. She took the SVIB-W to help measure the compatibility of her interests with those of others in this field. Her score on the Occupational Therapist scale of the SVIB was only 26 (C+). This score is to the left of the shaded zone on the profile sheet suggesting that the degree of similarity between her interests and those of employed O.T.'s was less than that of business and professional women in general. She scored higher (standard scores 27-51) on 23 of the other 57 occupational scales. Based on this information, she decided to major in another field, but was still somewhat confused about her interests. The KOIS was assigned at this point as a further check on her interests. When this test came back two weeks later, the profile sheet showed Occupational Therapist to be her highest score (.58). She indicated that she did not consciously distort her responses in any way for either test administration.

Given this new information, she decided to switch back to Occupational Therapy as a major probably greatly confused as to the relative meaning of the two counseling instruments.

Clearly, this type of discrepancy between the two major interest inventories on the market needs further study. Which test is correct? Are the two inventories in combination a better predictor than either inventory by itself as suggested by Zytowski (1968)? Does lack of congruence between the interest profiles suggest possible maladjustment or immaturity on the part of the client in any way? What aspect(s) of the item pool, item format, and/or standardization procedures may be contributing to the discrepant results? Zytowski's (1969a) work with the Librarian scales on the SVIB and the KOIS suggest that variation in the composition of the criterion group probably does not make a great deal of difference.

Until additional information is forthcoming, counselors may need to consider the possibility of giving both the SVIB and the KOIS (or alternative inventories) in those cases where interest assessment appears to be particularly difficult. A high score on either inventory suggests at least some similarity of interests with an occupational group.

Test Usefulness

6. Do interest inventories add anything to the counseling process? The interest inventories may be valid, but not tell the counselor or the client anything they do not already know by means of simpler, more economical techniques. This question may be subdivided into three parts.

(a) Do measured interests provide any information not available by means of expressed interests? A number of reports recently have suggested that expressed interests may predict future school or work criteria as well as, if not better than, inventoried interests (Dolliver, 1969; Holland & Lutz, 1967; Stahman, 1969; Whitney, 1969). Surprisingly, this topic has not been well studied in the past. Enough evidence is now accumulating, however, to suggest that an individual's statement of what he would like to do is, in many respects, as reliable and as valid a measure of interest as a scale on an interest inventory.

This issue obviously needs more study. How may expressed interests be best elicited? Under what circumstances may expressed interests change or inaccurately reflect work orientation? With additional study of this issue, it may be possible to specify more clearly the situations in which interest inventories should be used. At the very least, the interest inventories should be helpful in a) suggesting possible job fields or areas of specialization for the undecided student or b) reassuring the concerned student who wants to know, if, in fact, his interests do correspond with people employed in a certain area.

A discussion of <u>both</u> measured and expressed interests should benefit clients in educational and vocational planning (Berdie, 1970). The SVIB is essentially a "wideband" instrument which provides much more information than may be obtained by a simple expression of vocational choice (Cronbach & Gleser, 1965).

This information aids the counselor in forming hypotheses which may be explored in subsequent counseling sessions.

(b) Do interest inventories improve upon the predictive validity obtained with biographical data? Studies by Harmon (1970) and Stone and Athelstan (1969) suggest that biographical data (e.g., marriage, number of children, educational experience) may predict work variables for women more accurately than interest inventories. In both cases, however, the significant biographical data were usually not available until after the student's college years were completed. As with expressed interest, the contribution of biographical data (including pre-college data) in predicting school or work criteria needs to be more systematically compared with that of interest inventories.

(c) Does a skilled counselor need an interest inventory in vocational and educational planning with clients? For quite some time, Berdie(1960; Berdie & Campbell, 1968) has stressed the need for a study in which the relative effectiveness of counselors with and without the use of interest inventories could be determined.

Garrett (1961) found that the use of interest inventories (Kuder Preference-Vocational or SVIB-M) did not improve the accuracy of experienced counselors in predicting occupational membership beyond that attained through the use of pre-testing interview notes, other tests, and the information on a personal data sheet. It is, of course, possible that the interest inven-

tories contributed to the quality of counseling in ways not measurable by the criterion, however, this possibility needs empirical study. Some counselors, depending upon orientation and experience, may also gain more from the use of interest inventories than other counselors. Research on this topic should help further clarify the circumstances suggesting the use of an interest inventory.

7. Can interest inventories be used to assist women in social planning? Conceivably, interest inventories may be helpful in planning leisure time activities as well as work activities. Warren (1959), in one of the few studies on this topic, found that women tended to engage in volunteer activities which matched their measured interests. This finding indicates that women select volunteer activities on the basis of interests in much the same fashion as jobs are chosen. Because of less necessity to engage in volunteer work, it is quite possible that interests may play even a greater role in selecting such activities than in selecting remunerative jobs. The influence of interests on social activities is a topic worth further consideration. This topic seems to have been essentially neglected since Super's (1940) pioneer work in the area.

Rife (1970) has recently urged AFGA members to help establish guidelines for the preparation of recreational counselors. The value of interest inventories in assisting such counselors in planning leisure time activities with their clients needs to be explored in some detail.

Profile Interpretation

8. How can the results of interest inventories be best inter-

preted to clients? Although much of the criticism directed at the use of interest inventories (or tests in general) should be aimed at the test user instead of the test, relatively little research has been devoted to this topic (Goldman, 1961). Campbell, (1969b) believes this aspect to be the "most neglected link in interest measurement." Despite great efforts given to test construction, the "final output that is presented to the counselor and his client has received almost no attention" (Campbell, 1969b, 12).

A preliminary form of a computerized interpretation for the SVIB-W intended for client use has been developed by Sharf (1970). A special effort has been made to introduce more occupations into the printout than is found on the profile sheet. The relative effectiveness of this approach has not been studied.

Seaquist (1970) has recently completed a study in which a programmed interpretation of the SVIB-M was compared with a simple printed interpretation. He found no overall difference between the two methods. The need for more adequate criteria and improved interpretive guides was stressed. More research is obviously needed in this area both in terms of the effectiveness of mechanical aids and of different counseling techniques.

Conclusions

A single interest inventory for men and women, justified on the basis of available evidence, would benefit both counseling and research. Homogeneous scales, e.g., the new SVIB-W Basic

Interest Scales, and pattern analyses may help offset some of the disadvantages inherent in individual empirical scales.

Interest scores are relatively stable for most post-high school females, but are subject to change with new classroom or occupational experience. The specific factors influencing these changes have not been clearly identified.

Interest inventories are most valid in evaluating current academic or occupational interests. They have failed to predict career commitment. They have been moderately successful in predicting future occupational membership for career women. The relative validity of different interest inventories used singly or in combination demands further study.

Counselors must become aware of those circumstances in which it is advisable to use interest inventory and those situations in which it is probably unnecessary. Factors which need to be considered are the client's expressed interests, the availablilty of relevant biographical data, and the relative skill of the counselor in effectively utilizing information obtained from the interest profile. New uses for interest inventories with women, e.g., as aids in recreational counseling, appear promising.

Attempts to facilitate the interpretation of test results to clients need to be broadened and evaluated. A few recent studies have been undertaken, but more research on this topic is urgently needed.

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Footnote

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